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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,504	08/18/2000	J. Bruce Pitner	P-2776P1P1P1	7467

7590 02/07/2003

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EXAMINER

GITOMER, RALPH J

ART UNIT PAPER NUMBER

1651

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DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/642,504

Applicant(s)

Pitner et al.

Examiner

Ralph Gitomer

Art Unit

1651



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Sep 3, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-16, 49-62, and 91-102 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-16, 49-62, and 91-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

The amendment received 9/3/02 has been entered and claims 1-12, 14-16, 49-62, 91-102 are currently pending in this application.

5 In view of the amendments to the claims and arguments presented, the rejections of record under 35 USC 102(b) are hereby withdrawn.

10 Please inform the examiner as to how this application differs from each of the parent applications so the proper priority date may be granted. And please update the status of the related applications in the specification. The related applications are not available to the examiner at this time so any double patenting and other issues will be considered in the future.

15 No response to the above is found in the amendment; should the next response not fully address each and every of the above issues, it will be considered intentionally non-responsive.

20 A reading of the claims and specification do not reveal a specific functional problem solution or any particular point of novelty. Therefore, what has been searched and considered here, is immobilizing the conventional luminescent indicator. No weight is given to repeating measurements in an assay nor to some control in an assay. Both are old and the present specification  
25 reveals no surprising results of same.

Claims 92, 96, 98, 102 are rejected under 35 U.S.C. 112,  
first paragraph, as containing subject matter which was not  
described in the specification in such a way as to reasonably  
convey to one skilled in the relevant art that the inventor(s),  
5 at the time the application was filed, had possession of the  
claimed invention.

Please provide where in the specification written  
description is found for each feature in the newly presented  
claims. Table 12 does not disclosed the listed materials.

10  
The following is a quotation of 35 U.S.C. 103(a) which forms  
the basis for all obviousness rejections set forth in this Office  
action:

15 (a) A patent may not be obtained though the invention is not identically  
disclosed or described as set forth in section 102 of this title, if the  
differences between the subject matter sought to be patented and the prior  
20 art are such that the subject matter as a whole would have been obvious at  
the time the invention was made to a person having ordinary skill in the  
art to which said subject matter pertains. Patentability shall not be  
negated by the manner in which the invention was made.

25 This application currently names joint inventors. In  
considering patentability of the claims under 35 U.S.C. 103(a),  
the examiner presumes that the subject matter of the various  
claims was commonly owned at the time any inventions covered  
therein were made absent any evidence to the contrary. Applicant  
is advised of the obligation under 37 CFR 1.56 to point out the  
inventor and invention dates of each claim that was not commonly

owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103<sup>®</sup> and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5

Claims 1-12, 14-16, 49-62, 91-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Bacon and Parker.

10       Bacon (Anal Chem) entitled ~~❖~~Determination of Oxygen Concentrations by Luminescence Quenching of a Polymer Immobilized Transition Metal Complex~~❖~~ teaches in the abstract, tris(4,7-diphenyl-1, 10-phenanthroline)ruthenium(II) immobilized in a silicone rubber for measuring oxygen concentrations. On page 2780 column 2, silica gel bound luminescent dye is separated from  
15       the solution being measured. On page 2781 column 2, a number of polymers were tried and their qualities discussed.

20       Parker (Fiber Optic Sensors) entitled ~~❖~~Chemical Sensors Based on Oxygen Detection by Optical Methods~~❖~~ teaches in the abstract, fluorescence quenching to measure oxygen concentration with 9,10-diphenyl anthracene. On page 156, even when immobilized, fluorescent molecules show a reduction in fluorescence intensity with increasing oxygen concentration. Thus, solid materials can be developed to measure the concentration of oxygen. Chemical reactions that either consume  
25       or produce oxygen can be determined. The fluorescence compound

may be physically immobilized in a polymer such as silicone. On page 157 the reactions take place in cuvettes.

The independent claims differ from the above references in that they recite the enzyme is in solution.

5        Claims 5, 53 differ from the above references in that they specify the compound is adsorbed on solid silica particles. Claims 8, 9, 56, 57 differ from the above references in that they are directed to other ruthenium salts. Claims 11 and 12 differ from the above references in that they are directed to the  
10        solutions are open or closed. Claims 14-16, 60-62 differ from the above references in that they are directed to the enzymes are in specific cells and may include P450 enzymes particularly. New claims 91-102 are directed to materials for promoting cells growth.

15        It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the enzyme in solution because the references teach solutions contact the enzyme and the enzymes may be combined with other components.  
20        The examiner interprets ~~in solution~~ broadly where the enzyme may be combined with a matrix or contact other solutions. The solutions of the references are either open or closed and both are shown in the references cited herein for measuring oxygen concentrations. Further, to immobilize the luminescent compound  
25        on silica particles because silica particles are well known in

this art for immobilizing desired compounds. The references teach common ruthenium compounds and the presently claimed compounds are known in this art for their claimed function. No novelty is seen in the analyte being any particular type of cell or known redox enzyme system where the method of measuring is known for the same function as claimed and would have the expected results. The addition of materials to promote cell growth in assays for cell related processes is old in this art. See the many references cited of interest. The claims are unclear as to what may or may not be immobilized or in solution nor what the function of such may be. It is well known to immobilize or solubilize desired components.

No novelty is seen in employing repeated measurements as needed because no need is shown and no precision is required.

Applicant's arguments filed 9/3/02 have been fully considered but they are not persuasive.

Applicants argue that Bacon does not teach the determining in solution or comparing the experimental to controls and repeating the measurement as needed. Claim 49 recites the sensor is not in contact with the solution which is not taught by Bacon. Regarding Parker, the present claims require at least one enzyme in a solution where Parker has the enzyme immobilized. Also Parker does not teach a control and repeating measurements.

It is the examiner's position that the present claims require the determination of an enzyme in a solution with a sensor which sensor is contained within a matrix. Bacon and Parker clearly teach determining oxygen in solutions. The enzyme to detect the solutions contacts the solutions. See for example in the abstract of Parker detecting glucose with glucose oxidase. The present claims immobilize the sensor as does both references.

Regarding controls, the data obtained from both references is in some inherent manner calibrated and the standard method of calibration is with controls. Controls are well known in the determining arts and no novelty is seen in employing controls for any known function with the expected result. See page 162 of Parker who shows graphs to calibrate the determinations. Bacon also discusses calibrations.

Regarding repeating measurements, the graphs of Parker show repeated measurements. Further, the present claims repeat the measurements as needed so if Parker and Bacon did not need to repeat the measurements, their methods would read on the present claims. No function or criteria are claimed for any repetition of any measurements to any degree of precision.



Claims 91-102 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each of the following applies in all occurrences.

In claim 92, ~~the~~said concentration~~the~~ lacks antecedent basis. Claim 93 contains a trademarked name which is improper.

The title of the invention is not aptly descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

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date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ralph Gitomer whose telephone number is (703) 308-0732. The examiner can normally be reached on Tuesday-Friday from 8:00 am - 5:00 pm. The examiner can also be reached on alternate Mondays. If  
10 attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (703) 308-4743. The fax phone number for this Art Unit is (703) 308-4556. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist  
15 whose telephone number is (703) 308-1235. For 24 hour access to patent application information 7 days per week, or for filing applications electronically, please visit our website at [www.uspto.gov](http://www.uspto.gov) and click on the button Patent Electronic Business Center for more information.



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